

# Mineral Industry Surveys

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## MOLYBDENUM IN OCTOBER 2003

Domestic production of molybdenum in concentrate in October 2003 was about 2% less than that of the previous month and was about 8% less than that of October 2002, according to the U.S. Geological Survey. Year-to-date production of molybdenum in concentrate from January through October was about 7% more than during the same period in 2002. Producer stocks of molybdenum in concentrate, oxide, and other product forms were about 8,250 metric tons (t) at the beginning of 2003 and 4,900 t at the end of October.

According to Ryan's Notes (2003b), the October monthly averages for U.S. ferromolybdenum (FeMo) prices ranged from \$6.900 to \$7.000 per pound of molybdenum content, as compared with \$6.828 to \$7.000 in September. European FeMo monthly averages ranged from \$14.856 to \$15.078 per kilogram of molybdenum content in October as compared with \$15.217 to \$15.461 in September. In October, worldwide molybdenum oxide (MoX) prices ranged from \$5.850 to \$6.017 per pound versus \$6.050 to \$6.239 in September.

Molybdenum oxide and FeMo prices trended downward during the month of October as demand declined slightly. U.S. Dealer Oxide prices were about \$6.00 per pound in the last week of October. European FeMo prices were booked at \$14.50 to \$14.90 per kilogram through online tenders, and Chinese material was available at just over \$14.00 per kilogram. Some consumers attempted to buy forward at just under \$15.00 per kilogram. Most molybdenum sellers were closely monitoring

copper producers to see if production was increasing since copper prices had improved (Ryan's Notes, 2003a).

Kennecott Utah Copper Corp. reported it had produced about 3,500 t of molybdenum in concentrate in January through September of 2003. This represented a decrease of about 25% compared with the 4,700 t produced during the comparable period in 2002. The reason for the reduced production reportedly was a decrease in molybdenum content of the ore from 0.036% in 2002 to 0.024% in 2003 (TEX Report, 2003).

One of the plants of Jinduicheng Molybdenum Mining Corp. (JDC), with a capacity of 400-600 t of concentrate per month, remained down in October as a result of a maintenance shutdown and the after-effects of flooding in Huaxian County in Shaanxi province during August and September. This shutdown, and other flood-related problems, have reduced JDC's total molybdenum concentrate output to about half of its 1,500- to 1,600-ton-per-month capacity (Platts Metals Week, 2003).

## References Cited

- Platts Metals Week, 2003, JDC moly plant still down: Platts Metals Week, v. 74, no. 41, October 13, p. 5.  
Ryan's Notes, 2003a, Moly prices trend down: Ryan's Notes, v. 9, no. 43, October 27, p. 3.  
Ryan's Notes, 2003b, [untitled]: Ryan's Notes, v. 9, no. 44, November 3, p. 4.  
TEX Report, 2003, Output of molybdenum by Kennecott: Tex Report, v. 35, no. 8388, October 24, p. 1.

TABLE 1  
U.S. SALIENT MOLYBDENUM CONCENTRATE STATISTICS<sup>1</sup>

(Metric tons, contained molybdenum)

	2002	2003		
	January- December	September	October	Year to date
Production	32,400	2,870	2,810	28,500
Shipments: <sup>2</sup>				
Domestic	21,200	922	981	10,600
Export	11,100	2,110	1,890	17,800

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>As reported by producers.

TABLE 2  
U.S. REPORTED PRODUCTION AND SHIPMENTS OF MOLYBDENUM  
PRODUCTS<sup>1</sup>

(Metric tons, contained molybdenum)

	2002	2003		
	January- December	September	October	Year to date
Gross production	31,300	2,280	3,080	32,600
Internal consumption <sup>2</sup>	20,700	1,950	2,320	23,900
Gross shipments	27,500	2,980	2,670	25,600

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Includes molybdic oxides, metal powder, ammonium molybdate, sodium molybdate, and other.

TABLE 3  
U.S. REPORTED CONSUMPTION, BY END USES, AND CONSUMER STOCKS OF MOLYBDENUM MATERIALS<sup>1</sup>

(Kilograms, contained molybdenum)

End use	Molybdic oxides	Ferro molyb- denum <sup>2</sup>	Ammonium and sodium molybdate	Molyb- denum scrap	Other	Total
2003, September:						
Steel:						
Carbon	11,500	W	--	--	W	11,500
High-strength low-alloy	27,100	7,620	--	--	--	34,700
Stainless and heat-resisting	152,000	64,400	--	--	7,180	223,000
Full alloy	103,000	170,000	--	--	1,860	276,000
Tool	55,300	W	--	--	W	55,300
Total	349,000	242,000	--	--	9,040	600,000
Cast irons (gray, malleable, and ductile iron)	W	15,000	--	--	763	15,800
Superalloys	59,700	W	--	(3)	84,600	144,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	235	2,050	--	--	2,610	4,890
Mill products made from metal powder <sup>4</sup>	--	--	--	--	104,000	104,000
Cemented carbides and related products <sup>5</sup>	--	--	--	--	W	--
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,600	1,600
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	15,800	15,800
Other	1,090	34,000	76,600 <sup>r</sup>	--	17,400	129,000 <sup>r</sup>
Grand total	487,000	294,000	76,600 <sup>r</sup>	--	236,000	1,090,000
Stocks, September 30, 2003	349,000	162,000	4,510 <sup>r</sup>	8,480	851,000	1,380,000
2003, October:						
Steel:						
Carbon	10,600	W	--	--	W	10,600
High-strength low-alloy	32,500	8,010	--	--	--	40,500
Stainless and heat-resisting	167,000	59,900	--	--	7,180	234,000
Full alloy	100,000	163,000	--	--	1,860	265,000
Tool	57,000	W	--	--	W	57,000
Total	368,000	230,000	--	--	9,040	607,000
Cast irons (gray, malleable, and ductile iron)	W	15,600	--	--	763	16,300
Superalloys	75,900	W	--	(3)	98,500	174,000
Alloys: (other than steels, cast irons, and superalloys)						
Welding materials (structural and hard-facing)	--	W	--	--	6	6
Other alloys	191	2,370	--	--	2,610	5,170
Mill products made from metal powder <sup>4</sup>	--	--	--	--	107,000	107,000
Cemented carbides and related products <sup>5</sup>	--	--	--	--	--	--
Chemical and ceramic uses:						
Pigments	--	--	W	--	--	W
Catalysts	77,300	--	W	--	W	77,300
Other chemicals	--	--	--	--	1,190	1,190
Miscellaneous and unspecified uses:						
Lubricants	--	--	--	--	16,000	16,000
Other	14,300	38,300	75,800	--	17,400	146,000
Grand total	535,000	287,000	75,800	--	253,000	1,150,000
Stocks, October 31, 2003	372,000	172,000	5,300	21,400	870,000	1,440,000

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Other" of the "Miscellaneous and unspecified uses" category. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes calcium molybdate.

<sup>3</sup>Included in "Other" of the "Superalloys" category.

<sup>4</sup>Includes ingot, wire, rod, and sheet.

<sup>5</sup>Includes construction, mining, oil and gas, metal working machinery.

TABLE 4  
U.S. EXPORTS OF MOLYBDENUM ORES AND CONCENTRATES  
(including roasted concentrate), BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2002	2003		Year to date
	January-December	August	September	
Australia	46,900	38,000	3,540	77,000
Belgium	4,380,000	139,000	139,000	2,310,000
Brazil	32,600	2,360	4,690	35,100
Canada	1,080,000	18,100	46,700	827,000
Chile	16,200	--	--	14,200
China	56,700	725	--	3,620
Germany	64,400	--	--	1,440
India	141,000	--	182	11,500
Italy	47,900	--	--	15,200
Japan	1,130,000	167,000	197,000	1,520,000
Korea, Republic of	70,600	7,950	2,950	55,400
Mexico	484,000	344,000	345,000	3,360,000
Netherlands	7,330,000	1,320,000	1,500,000	8,190,000
Spain	41,200	4,130	--	4,130
Sweden	35,000	--	--	25,700
Taiwan	12,600	--	--	9,590
United Kingdom	4,330,000	1,140,000	1,360,000	5,750,000
Other	153,000	6,610	5,650	101,000
Total	19,500,000	3,200,000	3,600,000	22,300,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF FERROMOLYBDENUM, BY COUNTRY<sup>1</sup>

(Kilograms, contained molybdenum)

Country	2002	2003		Year to date
	January-December	August	September	
Australia	--	--	--	546
Canada	597,000	41,000	93,300	374,000
Chile	240	--	--	--
Denmark	5,110	241	--	241
Japan	--	--	--	61
Mexico	51,400	11,700	2,610	21,900
Netherlands	--	--	--	25,500
Switzerland	21,800	--	--	--
Taiwan	274	--	--	--
Total	676,000	53,000	95,900	422,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MOLYBDENUM PRODUCTS<sup>1</sup>

(Kilograms, unless otherwise specified)

Material	January-December 2002			September 2003		
	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)	Gross weight	Contained molybdenum	Value (c.i.f.) (thousands)
Ore and concentrates roasted	7,030,000	4,370,000	\$33,500	566,000	352,000	\$4,300
Ore and concentrates other	664,000	340,000	3,450	800,000	258,000	431
Molybdenum chemicals:						
Oxides and hydroxides	1,200,000	NA	7,660	160,000	NA	1,230
Molydates of ammonium	1,740,000	1,010,000	11,200	113,000	65,800	875
Molydates (all others)	435,000	88,600	1,630	23,200	20,400	111
Molybdenum orange	1,300,000	NA	5,490	72,100	NA	361
Ferromolybdenum	5,570,000	3,590,000	31,400	702,000	387,000	4,460
Molybdenum powders	39,500	31,700	1,110	5,290	4,110	210
Molybdenum unwrought	43,500	43,200	542	10,200	8,190	126
Molybdenum waste and scrap	697,000	617,000	6,910	35,900	34,800	428
Molybdenum wire	14,600	NA	697	2,050	NA	88
Molybdenum other	84,800	NA	7,240	6,640	NA	538
Total	18,800,000	10,100,000	111,000	2,500,000	1,130,000	13,100

NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.